

REMARKS

The Official Action of 1 March 2007 has been carefully considered and reconsideration of the application as amended is respectfully requested.

The claims have been amended or rewritten to remove the bases for the rejections under 35 USC 112, second paragraph appearing at paragraphs 2-7 of the Official Action. As to the rewritten claims, new claims 22-27 contain subject matter from original claims 11-16, 20 and 21, and new claims 30-31 contain subject matter from original claims 20-21. New claims 28 and 32 have been added more completely to define the subject matter that Applicants regard as their invention. (Note: MPEP 2173.05(s) acknowledges that reference in the claims to drawing figures is permitted in exceptional circumstances, such as those present here, where such reference makes the claims more concise.) All claims presently of record are respectfully believed to be sufficiently definite to satisfy the dictates of 35 USC 112, second paragraph.

Claims 1-13, 15-18, 20 and 21 stand rejected under 35 USC 102(b) as allegedly being anticipated by Bancroft et al. Applicants respectfully traverse this rejection.

The invention as defined in each of the claims as amended is based in part on Applicants' recognition that (a) the 3-DNA base codes used in the prior art to encrypt information are insufficient to encrypt a complete extended ASCII character set and (b) a DNA base code that uses more than 4 bases per character poses a burden in the handling of the

DNA sequence. Applicants realized that, to encrypt all kinds of digital information including text, images, audio, video, etc, it is necessary to identify a complete extended ASCII character set in terms of DNA bases. This requires the use of a code comprising 4-DNA bases per character. Accordingly, the claims as amended identify each character in an extended ASCII character set using a 4-DNA base code.

The invention as defined in each of claims 22-28 is also based in part upon Applicants recognition that it is useful in certain situations to encode a message using a plurality of different DNA fragments, each of which encrypts a different portion of the message. In that event, the primers of each of the DNA fragments can provide an indication of the order in which the portions of the message should be read (see specification at page 3). Claims 22-28 recite a plurality of encryption DNA sequences for encrypting a message.

In contrast, the cited reference, Bancroft, teaches the use of a simple three-base code to represent each letter of the alphabet (Bancroft at column 3, lines 36-46), but does not teach the use of a four-base code as claimed. Moreover, Bancroft does not teach or suggest the encryption of a message using a plurality of encryption DNA sequences as recited in claims 22-28.

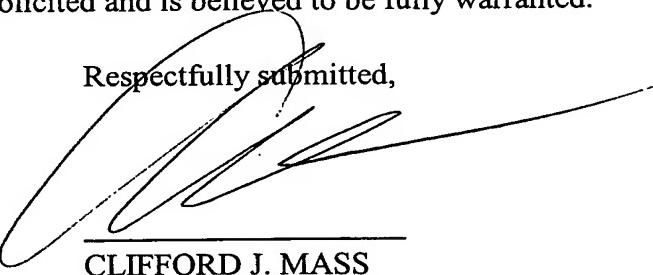
The use of a simple three-base code as taught in Bancroft limits the method described therein to the encryption of alpha-numerals and some special characters. Most digital documents, such as images, audio, video, etc., cannot be represented using the methods

described in Bancroft, which methods are necessarily limited to non-digital documents. In contrast, the claimed method uses a code comprising a unique sequence of 4-DNA bases that may be used to represent all kinds of digital information, including text, images, audio, video, etc. Since Bancroft does not teach a 4-DNA base code it respectfully cannot be considered to anticipate the invention as defined in any of the claims presently of record.

With specific reference to claims 22-28, Applicants respectfully note that the Examiner did not cite any prior art against claim 14, which subject matter is now included in claims 23-25, and that the portions of Bancroft applied against claims 12 and 15 do not teach or suggest the conjoint use of a plurality of different DNA fragments to encode different portions of a message, or the use of different primers in the different fragments to identify the order of reading each different portion of a message. Accordingly, Bancroft cannot be considered to anticipate these claims for this reason as well.

In view of the above, Applicants respectfully submit that all rejections and objections of record have been successfully traversed and that the application is now in allowable form. An early notice of allowance is earnestly solicited and is believed to be fully warranted.

Respectfully submitted,



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